

Epidemiology of Non-O157 Shiga Toxin-Producing *Escherichia coli* (STEC) Cases in FoodNet Surveillance in CT, MN and NY, 2000-2004

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Background: STEC is an important cause of diarrhea and the major cause of hemolytic uremic syndrome (HUS). The most common serogroup implicated in severe illness is O157, but non-O157 STEC serotypes are being recognized with increasing frequency in persons with diarrheal illness. The epidemiology of non-O157 STEC infection in the US is not well described.

Methods: Few clinical laboratories test stool specimens for non-O157 STEC. However, the Foodborne Diseases Active Surveillance Network (FoodNet) collects data on those that are reported. A case was defined as isolation of non-O157 STEC from the stool of a resident of the CT, MN or NY FoodNet catchment areas (12.9 million persons). Only isolates with a known O antigen were included. State surveillance data were merged with FoodNet data.

Results: From 2000-04, FoodNet ascertained 213 cases of non-O157 STEC infection in CT (97), MN (83) and NY (33), a 3.3 per million annual incidence. Median age of cases was 13 years old (range 1 month to 88 yrs); 57% were female. Of cases with known race and ethnicity, 93% were non-Hispanic white.

Clinical data were available for 76% of cases. Diarrhea (98%), abdominal cramps (83%) and bloody stool (50%) were the most common manifestations. Four (2%) had HUS. Symptoms lasted a median of 7 days, with 27% receiving antibiotic therapy and 15% hospitalized for a median of 3 days. No deaths were reported.

Of the 27 non-O157 serogroups detected: O111 was the most common (37%), followed by O103 (17%), O26 (16%), O45 (9%), and O145 (5%). Each of the remaining non-O157 serotypes contributed less than 2%. HUS was associated with O111 and O145 (2 cases each). O145 (OR 3.9; CI, 1.2-12.4) and O45 (OR 2.6; CI, 1.1-8.2) cases were hospitalized more often than all other non-O157 serotypes. O145 cases also had the longest median hospital stays compared to all other serotypes (10.5 vs. 3.0 days).

Conclusions: Five serogroups were responsible for 84% of illness due to non-O157 STEC. As laboratories switch to non-culture based methods of detecting STEC, these results are a reminder that public health surveillance needs can be met only when isolates are obtained so serogroup can be determined.